February 28, 1996

MEMORANDUM

TO: Orville D. Green, Assistant Administrator
Permits and Enforcement

FROM: Brian R. Monson, Chief
Operating Permits Bureau

SUBJECT: Issuance of Tier II Operating Permit (#031-00001) to Gordon Paving Company, Incorporated (Burley)

PURPOSE

The purpose of this memorandum is to satisfy the requirements of IDAPA 16.01.01 Sections 400 through 406 (Rules for the controls of Air Pollution in Idaho) for issuing Operating Permits.

PROJECT DESCRIPTION

This project is for the issuance of a Tier II Operating Permit for the Gordon Paving Company, Incorporated, facility located at Burley, Idaho, in order to establish the facility as a synthetic minor source. The only emission point source existing at the facility is controlled by a Venturi scrubber. Fugitive emission sources found at the facility are stockpiles and haul roads.

SUMMARY OF EVENTS

On January 20, 1995, DEQ received an operating permit application from Gordon Paving Company, Incorporated - Burley plant. Additional information was received on March 31, 1995, April 25, 1995, and August 23, 1995. The application was declared complete on September 22, 1995. More information, related to the application, was submitted on November 20, 1995, and on December 7, 1995. On December 21, 1995, a proposed Tier II Operating Permit was issued for public comment. No comments were received.

RECOMMENDATIONS

Based on the review of the Operating Permit application, and on applicable state and federal regulations concerning the permitting of air pollution sources, the Bureau staff recommends that Gordon Paving Company, Incorporated, Burley, Idaho, be issued a Tier II Operating Permit. Staff also recommends that the facility be notified in writing of the obligation to pay permit application fees for the Tier II permit.

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cc: R. Lupton, SCIRO
OP File Manual
Source File
COF

December 15, 1995

MEMORANDUM

TO: Brian R. Monson, Chief
Operating Permits Bureau
Permits and Enforcement

FROM: Camille D. Ajaka, Air Quality Engineer
Operating Permits Bureau

THROUGH: Susan J. Richards, Air Quality Permits Manager
Operating Permits Bureau

SUBJECT: Technical Analysis for Proposed Tier II Operating Permit #031-00001, Gordon Paving Company, Incorporated, Burley, Idaho

PURPOSE

The purpose for this memorandum is to satisfy the requirements of IDAPA 16.01.01 Sections 400 through 406 (Rules for the Control of Air Pollution in Idaho) for issuing Operating Permits (OP).

FACILITY DESCRIPTION

Gordon Paving Company, Burley plant was constructed in 1972 and based on the information presented in the permit application, the facility did not undergo any major modification. The plant is a batch type hot-mix asphalt plant. The Burley plant consists of the feed system, the rotary drum dryer, the batching tower, and the control equipment (twin parallel cyclone and Venturi scrubber).

Project Description

This project is for an Operating Permit for the following existing point and fugitive emission sources.

Point Sources:

(1) Drum Dryer Venturi scrubber Stack: Emissions from the rotary drum dryer enter a twin parallel cyclone separator manufactured by Standard Steel and then exit to an adjustable Venturi scrubber.

Venturi Scrubber Specifications:

Manufacturer:	Gordon Paving Company
Model:	----
Air Capacity:	18,900 ft^3/min
Pressure Drop:	5.0 in. H_2O
Control Efficiency:	99.83% for PM and PM-10
Wet Scrubber Flow	2,600 GPM

Process Equipment

Standard Steel Model RN 5000, batch, hot-mix asphalt plant, with a rated capacity of 170 tons per hour (T/hr).

Four (4) feed bins, each with a maximum capacity of fifteen (15) tons.

Variable speed feed conveyor belts.

A 7' x 28" rotary drum dryer

A Genco Model FP 69 burner (waste oil fired), with a rated capacity of 46.5 million British thermal units per hour (MMBtu/hr)

Three (3) deck 5' x 12' vibrating screens (totally enclosed)

Four (4) hot gravel storage bins

A pug-mill mixer

A Caterpillar Model 980 front-end loader

Fugitive Sources:

(1) Stockpiles

(2) Unpaved roads

(3) Paved Roads

A more detailed process description is found in the operating permit application materials.

SUMMARY OF EVENTS

On January 20, 1995, DEQ received an operating permit application from Gordon Paving Company, Incorporated - Burley plant. Additional information was received on March 31, 1995, April 25, 1995, and August 23, 1995. The application was declared complete on September 22, 1995. More information, related to the application, was submitted on November 20, 1995, and on December 7, 1995.

A public comment period is scheduled from December 27, 1995, to January 27, 1996.

DISCUSSION

1. Emission Estimates

Emission estimates were provided by Gordon Paving Company, Incorporated. The calculations were resubmitted by the applicant according to DEQ request. DEQ also estimated the emissions from all the sources of the facility (attached spreadsheet). Calculations were based on the maximum production rate of the plant, 170 tons per hour (T/hr), and on the annual operating time, 2,072 hours per year.

All emissions were estimated using emissions factors furnished by AP-42, 5th edition. Emissions estimates of PM, PM-10, NO_x, CO, and VOC were calculated using emissions factors of oil fired dryer of batch mix hot-mix asphalt plant (Tables 11.1-2 and 11.1-7). Emissions estimate of SO_2 was calculated using emission factor of waste oil combustion (AP-42, Table 1.11-2) and assuming that the sulfur content of waste oil to be 1.75% as required by IDAPA 16.01.01.727.02. Emissions from transfer points were estimated using the predictive equation in the 5th edition of AP-42, Section 13.2.4-3. Emissions from stockpiles were estimated using emissions factors listed in the 4th edition of AP-42 Table 8.19.1-1 (such factors were not available in the 5th edition). Emissions from paved and unpaved roads were estimated using predictive equations listed in the 5th edition of AP-42, Section 13.2. All emissions calculations are provided in the attached spreadsheet.

2. Wet Scrubber Exhaust Stack Parameters

Stack Height	32.00 ft
Exit Diameter	2.83 ft
Exit Flow rate	18900 ACFM
Exit Temperature	114°F

3. Modeling

Modeling for impact analysis for the various emissions from the facility's point source was performed by Mary Walsh, DEQ meteorologist, based on DEQ's emissions estimates.

The hourly, daily, and annual periods of operation were considered in the modeling. It was found that for the permitted production rate and operating schedule, all the criteria pollutants are well within the national standards for the facility area.

Fugitive emissions were not modeled because estimated fugitive emissions are expected to vary considerably from the source's actual emissions. Modeling results would reflect the emission estimates with an added level of conservatism built into the model. Because of the range and accuracy questions involved in the emissions estimates, modeling of fugitive emissions was not conducted.

4. Area Classification

Gordon Paving Company, Incorporated, Burley, Cassia County, Idaho, is located in AQCR 63. The area is classified as attainment or unclassifiable for all federal and state criteria air pollutants (i.e., PM, PM-10, CO, NO_x, VOCs, and SO_2).

5. Facility Classification

The facility is not a designated facility as defined in IDAPA 16.01.01.006.25. The facility is classified as an A2 source because the actual emissions of any criteria pollutant is less than 100 tons per year (T/yr).

6. Regulatory Review

This operating permit is subject to the following permitting requirements:

a.	IDAPA 16.01.01.401	Tier II Operating Permit
b.	IDAPA 16.01.01.403	Permit Requirements for Tier II Sources
c.	IDAPA 16.01.01.404.01(c)	Opportunity for Public Comment
d.	IDAPA 16.01.01.404.04	Authority to Revise or Renew Operating Permits
e.	IDAPA 16.01.01.406	Obligation to Comply
f.	IDAPA 16.01.01.470	Permit Application Fees for Tier II Permits
g.	IDAPA 16.01.01.625	Visible Emission Limitation
h.	IDAPA 16.01.01.650	General Rules for the Control of Fugitive Dust
i.	IDAPA 16.01.01.700	Particulate Matter -- Process Weight Limitations
j.	IDAPA 16.01.01.808	Rules for the Control of Hot-Mix Asphalt Plants

The plant was constructed in 1972, and since it did not undergo any major modification, then the facility is not subject to the federal new source performance standards, 40 CFR 60 Subpart I.

7. Performance Test Requirements

Gordon Paving Company, Incorporated, Burley facility was constructed in 1972. This source is not considered a grandfathered source, and should have obtained a construction permit. A particulate matter (PM) performance test is required to show compliance with IDAPA 16.01.01.700 and with the limits stated in Appendix A of the Tier II operating permit.

FEES

Fees apply to this facility in accordance with IDAPA 16.01.01.470. The facility is subject to permit application fees for Tier II permits of five hundred dollars ($500.00). IDAPA 16.01.01.470 became effective on March 7, 1995.

RECOMMENDATIONS

Based on the review of the Tier II Operating Permit application and of applicable state and federal regulations concerning the permitting of air pollution sources, staff recommends that Gordon Paving Company, Incorporated, located at Burley, Idaho, be issued a Tier II Operating Permit for the sources that are described in the facility's permit application. An opportunity for public comment on the air quality aspects of the proposed permit shall be provided as required by IDAPA 16.01.01.404.01. Staff also recommends that the facility be notified of the Tier II permit fee requirement in writing. This fee will be applicable upon issuance of the permit.

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cc: R. Lupton, SCIRO
Source File
COF

Gordon Paving Company, Inc.
P.O. Box 4011
Burley, ID 83318

BURLEY FACILITY

Contact Person: Ken Hansen
PTC #:

Operating Permit Application

General Data

Avg. Asphalt Production	352240 tons/year
Avg. Operating Hours	2072 hours/year
Avg. Production Rate	170 tons/hour

Operating Schedule

Up to	Avg.	Unit
10	8	hr/dy
7	7	dy/wk
50	37	wk/yr

Rotary Drum Dryer Data

Avg. Annual Waste Oil Use	766640 gal/year
Avg. Hourly Waste Oil Use	370.00 gal/hr
Wate Oil Heating Value	144000 btu/gal
Burner Capacity	53.28 MM Btu/hr

Waste Oil Analysis

Component	S	N	C	H	Water	Ash	Total
Percentage	1.08	0.21	78.5	14	0.34	1.35	95.48
Component	Arsenic	Cadmium	Chromium	Lead	Cl^-	F^-	Total
Percentage	0.00025	0.00011	0.00032	0.006	0.015	0.005	0.03
Total							95.51

Emissions from Waste Oil Combustion

Pollutant		E. Factor lb/1000gal	Reference AP-42, 5th	Cont. Eff. %	Hourly E. lb/hr	Annual E. ton/yr
PM	61A	82.35	T 1.11-1	99.83	0.05	0.05
PM-10	51A	68.85	T 1.11-1	99.83	0.04	0.04
SOx	S_{limit}=1.75 147S	257.25	T 1.11-2	0	95.18	98.61
NOx		19	T 1.11-2	0	7.03	7.28
CO		5	T 1.11-2	0	1.85	1.92
VOC		0.1	T 1.11-3	0	0.04	0.04
Lead		0.33	T 1.11-1	0	1.22E-01	1.26E-01
HCl		0.99	T 1.11-3	0	3.66E-01	3.79E-01
Arsenic		1.10E-01	T 1.11-4	0	4.07E-02	4.22E-02
Cadmium		9.30E-03	T 1.11-4	0	3.44E-03	3.56E-03
Chromium		2.00E-02	T 1.11-4	0	7.40E-03	7.67E-03
Cobalt		0.00021	T 1.11-4	0	7.77E-05	8.05E-05
Manganese		6.80E-02	T 1.11-4	0	2.52E-02	2.61E-02
Nickel		0.011	T 1.11-4	0	4.07E-03	4.22E-03

Emissions from Batch Mix Hot-Mix Asphalt Plant (Oil Fired Dryer)

Pollutant		E. Factor lb/ton	Reference	Cont. Eff. %	Hourly E. lb/hr	Annual E. ton/yr
PM		32	T 11.1.2	99.83	9.25	9.58
PM-10		4.5	T 11.1.2	99.83	1.30	1.35
SOx		0.24	T 11.1.7	0	40.80	42.27
NOx		0.17	T 11.1.7	0	28.90	29.94
CO		0.069	T 11.1.7	0	11.73	12.15
VOC		0.046	T 11.1.7	0	7.82	8.10
POM		2.21E-04	T 11.1-9	0	3.76E-02	3.89E-02
Formaldehyde		0.0032	T 11.1-9	0	0.54	0.56

Emissions from Transfer Points

E=k(0.0023)(U/5)^1.3/(M/2)^1.4   Ref.: AP-42, 13.2.4-3 5th

k (PM)= 1
k (PM-10)= 0.35

Source	U mph	M %	Transfer Points #	E. Factor lb/ton	Cont. Eff. %	Hourly E. lb/hr	Annual E. T/yr
PM (Transfer Points)	9.7	4.6	9	0.0017	0	2.60	2.69
PM-10 (Transfer Points)	9.7	4.6	9	0.0006	0	0.91	0.94

Emissions from Degreasing Solvents (operating time = 1720 hr/yr)

Pollutant	Amt. Used gal/yr	Solvent S.G. g/ml	Conv. Fact. ml/gal	Conv. Fact. lb/g	Wt. of Sol. lb/yr	Hourly E. lb/hr	Annual E. ton/yr
VOC	100	0.76	3785.4	0.0022	634.24	0.37	0.32

HAPs		Wt. %	Wt. of HAP lb/yr	Hourly E. lb/hr	Annual E. ton/yr
Cumene		0.22	1.40	8.11E-04	6.98E-04
Ethylbenzene		0.33	2.09	1.22E-03	1.05E-03
Naphthalene		0.30	1.90	1.11E-03	9.51E-04
Toluene		4.20	26.64	1.55E-02	1.33E-02
Xylene		0.84	5.33	3.10E-03	2.66E-03

Emissions from Stockpiles

Pollutant	E. Factor lb/ac/dy	Reference	Cont. Eff. %	Area Acres	# of Days	Hourly E. lb/hr	Annual E. ton/yr
PM (active stockpile)	13.2	T 8.19.1-1, 4th	0	0.71	86.33	0.39	0.40
PM-10	6.3	T 8.19.1-1, 4th	0	0.71	86.33	0.19	0.19
PM (inactive)	3.5	T 8.19.1-1, 4th	0	0.71	278.67	0.10	0.35
PM-10	1.7	T 8.19.1-1, 4th	0	0.71	278.67	0.05	0.17
Total PM						0.49	0.75
Total PM-10						0.24	0.36

Traffic on Unpaved Roads

s=Road Silt Content (%)= 6.1
S=Vehicle Speed (mph)= 5
p=# of days (<.01 in prp.)= 78
k (PM)= 1
k (PM-10)= 0.36

E=k(5.9)(s/12)(S/30)(W/3) ^ 0.7(w/4) ^ 0.5[(365-p)/365] Ref.: AP-42, 13.2.2-1 5th

Source	Mean Wt. W (tons)	# of wheels w	Cont. Eff. %	E. Factor lb/VMT	VMT	Hourly E. lb/hr	Annual E. T/yr
PM (Loader)	31	4	0	2.02	12474	5.13	12.57
PM-10 (Loader)	31	4	0	0.73	12474	1.85	4.53
PM (10 wheel trucks)	16.5	10	0	2.05	952	0.40	0.98
PM-10 (10 wheel)	16.5	10	0	0.74	952	0.14	0.35
PM (18 wheel trucks)	20.5	18	0	3.20	119	0.08	0.19
PM-10 (18 wheel)	20.5	18	0	1.15	119	0.03	0.07
PM (20 wheel trucks)	23.25	20	0	3.68	60	0.05	0.11
PM-10 (20 wheel)	23.25	20	0	1.33	60	0.02	0.04
PM (26 wheel trucks)	34	26	0	5.48	60	0.07	0.16
PM-10 (26 wheel)	34	26	0	1.97	60	0.02	0.06
Total PM						5.72	14.01
Total PM-10						2.06	5.04

Traffic on Paved Roads

sL=silt loading= 120 g/m^2 Ref.: AP-42 T 13.2.1-1 5th
k (PM)=0.082/0.8= 5.73 Ref.: Fugitive dust sources and control, 11/7/95, C. Cowherd
k (PM-10)= 0.90 Ref.: Fugitive dust sources and control, 11/7/95, C. Cowherd
E=k(sL/2) ^ 0.65(w/3) ^ 1.5 Ref.: Fugitive dust sources and control, 11/7/95, C. Cowherd

Source	Mean Wt. W (tons)	Cont. Eff. %	E. Factor g/VMT	E. Factor lb/VMT	VMT	Hourly E. lb/hr	Annual E. T/yr
PM (Trucks)	23.6	0	1810.37	3.99	1278	1.04	2.55
PM-10 (Trucks)	23.6	0	284.27	0.63	1278	0.16	0.40